WHAT IS CLAIMED IS:

1   1.   A computer-implemented method for persisting object-oriented data objects,
2   comprising:
3   defining in a source program a first structure type for storage of one or more data
4   values;
5   defining in the source program a plurality of objects of the structure type;
6   initializing the objects with selected data values in the source program;
7   defining in the source program a first class that derives from the structure type,
8   the class including a static method configured to convert an object of the structure type to
9   an instance of the class in response to a reference to the method; and
10   allocating memory for the objects and assigning the data values to the objects at
11   compile-time.

1   2.   The method of claim 1, further comprising:
2   defining in the source program one or more traits classes, each traits class
3   including first, second, and third public type definitions, the first type definition
4   identifying a class described by the traits class, the second type definition identifying a
5   base structure for the class described by the traits class, and the third type definition for
6   identification of a structure for input to the static method of the class described by the
7   traits class, for reference to the class described by the traits class, and for assignment of
8   data to the class described by the traits class; and
9   defining in the source program a second class, the second class including an
10   attribute of the third type definition of a traits class that describes the first class.

1   3.   The method of claim 2, further comprising:
2   defining in the source program a collection class that includes objects of the first
3   class; and
4   instantiating objects of the first class in an object of the collection class in the
5   source program.

1   4.   The method of claim 3, further comprising defining in the source program a

2   collection iterator configured to traverse the objects of the first class in the collection

3   object.

1   5.   The method of claim 4, further comprising:

2   defining in the source program a second structure type that includes one or more

3   void pointers and an input aggregate structure; and

4   defining one or more of the traits classes with the second structure type used as

5   the third public type definition.

1   6.   The method of claim 5, further comprising:

2   defining a template class that includes an initialize method that calls a language-

3   provided function that constructs an object of a specified type;

4   defining in one of the traits classes a member attribute that is a pointer to the

5   initialize method.

1   7.   The method of claim 4, further comprising:

2   defining in the source program a pre-processor macro that encapsulates the

3   collection class; and

4   instantiating objects of the first class in an object of the collection class in the

5   source program by reference to the pre-processor macro.

1   8.   The method of claim 7, further comprising defining in the source program a pre-

2   processor macro that forward references the collection class.

1   9.   The method of claim 7, further comprising defining in the source program a pre-

2   processor macro that references an element of a first collection in an entry of a second

3   collection.

1   10.   The method of claim 7, further comprising defining in the source program a pre-

2   processor macro that initializes a collection having no entries.

1 11.   The method of claim 7, further comprising:

2   defining in the source program a second structure type that includes one or more

3 void pointers and an input aggregate structure; and

4   defining one or more of the traits classes with the second structure type used as

5 the third public type definition.

1 12.   The method of claim 11, further comprising:

2   defining a template class that includes an initialize method that calls a language-

3 provided function that constructs an object of a specified type;

4   defining in one of the traits classes a member attribute that is a pointer to the

5 initialize method.

1 13.   The method of claim 4, further comprising defining an initializer class that

2 iterates through objects in the collection class invoking a default constructor for an input

3 class type.

1 14.   The method of claim 2, further comprising:

2   defining in the source program a second structure type that includes one or more

3 void pointers and an input aggregate structure; and

4   defining one or more of the traits classes with the second structure type used as

5 the third public type definition.

1 15.   The method of claim 10, further comprising:

2   defining a template class that includes an initialize method that calls a language-

3 provided function that constructs an object of a specified type;

4   defining in one of the traits classes a member attribute that is a pointer to the

5 initialize method.

1   16.   An apparatus for persisting object-oriented data objects, comprising:

2   means for defining in a source program a first structure type for storage of one or

3   more data values;

4   means for defining in the source program a plurality of objects of the structure

5   type;

6   means for initializing the objects with selected data values in the source program;

7   means for defining in the source program a first class that derives from the

8   structure type, the class including a static method configured to convert an object of the

9   structure type to an instance of the class in response to a reference to the method; and

10   means for allocating memory for the objects and assigning the data values to the

11   objects at compile-time.